

A Comparative Study on the Productive and Academic Vocabulary Knowledge of Japanese and Chinese University Students

—Focusing on the Students' Performances in the Two Vocabulary Tests

Fuyun SONG

Ph. D. Candidate, Graduate School for International Development and Cooperation,
Hiroshima University, 1-5-1 Kagamiyama, Higashi-Hiroshima 739-8529, Japan
E-mail: songfy@hiroshima-u.ac.jp

Abstract

This study investigates and compares 143 Japanese and 146 Chinese university students' performances in two English vocabulary tests, the Productive Levels Test (PLT) and the Academic Vocabulary Test (AVT). Two groups of students are in their sophomore year. In PLT, the correct responses, and incorrect responses, which are classified into five types of errors that the students made when producing 18 tested words at the 2,000 word-level, are analyzed and compared. In AVT, using the Vocabulary Knowledge Scale, the performances of the students for the 40 academic words in the two academic texts, derived from the Coxhead's 3.5 million words' corpus (1998), are measured and compared. The results found in PLT reveal that the productive vocabulary knowledge of the Japanese and Chinese university students at the 2,000 word-level is not sufficient to confront the tasks required by the English course for a university student. The results in AVT reflect that the academic vocabulary knowledge of the students is mainly maintained on the stage of recognizing the academic words, indicating that the students are defective at using and producing the academic words they have learned in their English writing. In AVT the performances of the Japanese and Chinese students in some of the words are found to have significant differences. The influential factors resulting in the differences between the two groups of students are discussed in the present paper.

Key words: Vocabulary knowledge, vocabulary tests, Japanese and Chinese university students

1. Introduction

The aim of learning English as a foreign language for both Japanese and Chinese students is to acquire practical ability in the skills of understanding, speaking, reading and writing in English. Both Japanese and Chinese students, however, have their own L1 orthographic and phonological tradition significantly different from that of English, which directly influences their orthographic processing, their phonological working memory, and word recognition in their vocabulary learning. Moreover, they have much less natural and incidental exposure to English. The time available for the Japanese students to learn English in the classroom is 3 hours per week, and for the Chinese students is 4 hours a week.

Therefore, although the students have learned English for about seven or eight years in the classroom, because they get more practice of receptive use of the learned words than productive use, they are usually good at their receptive knowledge of the learned words, but meet with some difficulties to produce the learned words well in a sentence-context. They are weak at interpreting the meanings of some of the high frequency words they have learned or lack the ability of using and producing the words in their English speech and writing. Or they meet with difficulty in communicating in speaking and writing in English relatively independently and in accomplishing the speaking and writing tasks required in English courses.

The purpose of this study is 1) to examine and compare the productive vocabulary knowledge of the Japanese and Chinese students through analyzing the correct responses and incorrect responses - five types of errors the students made when producing the 18 tested words in the 2,000 word-level in PLT, and to see which errors are easier to make; 2) to measure and compare the academic vocabulary knowledge of the Japanese and Chinese students through analyzing the depth of the 40 academic words in AVT, and to try to analyze the factors which result in the differences in the scores of some of the tested words between the two groups of the students.

This study intends to answer the questions of how well the productive vocabulary knowledge of the Japanese and Chinese students is at the 2000 word-level and to what extent or depth of the academic vocabulary knowledge the two groups of the students have. The results of this study will aid in designing and developing appropriate vocabulary learning programs and bettering the vocabulary acquisition and instruction for university students who learn English as a foreign language.

2. Rationales

2.1. Rationale for Productive Vocabulary Knowledge

It is recognized that knowing a word entails having mastery over various kinds of lexical knowledge. At the most general level, knowing a word involves form, meaning and use (Nation, 2001). Productive vocabulary knowledge is seen as knowing how to express a meaning through speaking or writing and retrieving and producing the appropriate spoken or written word form (Nation, 2001). According to Laufer (1992; 1997), the productive knowledge at the 2,000-word level is the approximate threshold required to communicate in speaking and writing in English relatively independently. Coady (1993) emphasized that these frequent words should be learned to the point of automaticity.

Nation (1990) argued that the 2,000 most frequent words in Michael West's General Service List of English Words (GSL) (1953), which are referred to the 2,000 words in this study, account for at least 85% of the words on any page of any book no matter what the topics are. Any time spent learning them will be well repaid because they cover a lot of texts and will be met often. Nation and Newton (1997) also stated that the 2,000 most frequent words should be learned as quickly as possible by the most efficient means, including direct teaching and the use of graded readers.

2.2. Rationale for Academic Vocabulary Knowledge

Nation (2001) described several reasons why academic vocabulary is considered to be an important and useful learning goal for learners of academic English. First, academic vocabulary is common to a wide range of academic texts. Second, academic vocabulary accounts for a substantial number of words in academic texts. And third, academic vocabulary is the kind of specialized vocabulary that an English

teacher can usefully help learners with. It was described (Coxhead & Nation, 2001) that the acquisition of the academic vocabulary allows the students to describe their scientific activities in English and facilitates the accomplishment of the required courses in English.

For university students who learn English as a foreign language, the goal of vocabulary teaching focuses on cultivating the recognitions, understanding, and use of academic vocabulary in their study. Therefore, academic vocabulary is essential support vocabulary for the academically-oriented Japanese and Chinese university students. In vocabulary teaching and learning, it is necessary for students to have a thorough knowledge of words that occur frequently in different academic texts in order to read and understand the advanced, authentic, and academic texts in English or to use the academic words when writing in their own fields.

The academic vocabulary in this study refers to the 570 word families of An Academic Word List (AWL) (Coxhead, 1998), which are reasonably frequent in a wide range of academic texts and a range of uses in academic contexts. These words provide coverage of around 8.5%-10% of the running words in an academic text (Schmitt, 2000). The 570 word families are outside the 2,000-level words produced by West and were compiled with the academic goal of highlighting the words that university students meet in a wide range of academic texts.

The research done by Coxhead and Nation (2001) has proved that the composite list of 2,570 headwords in GSL and AWL will yield the reader an understanding of about 95% of the vocabulary found in almost any text. Once these words are adequately understood, students are ready to learn and apply word attack strategies and to unlock the meaning of unknown and less frequently occurring words.

2.3. Vocabulary Knowledge Scale (VKS)

Paribakht and Wesche (1997) developed the Vocabulary Knowledge Scale to distinguish stages in learners' developing knowledge of particular words. This instrument uses a 5-point scale combining self-report and performance items to elicit self-perceived and demonstrated knowledge of specific words in written form. The scale ratings range from total unfamiliarity, through recognition of the word and some idea of its meaning, to the ability to use the word with grammatical and semantic accuracy in a sentence.

Table 1 shows the five scales in VKS and its matched five ratings.

Table 1. Vocabulary Knowledge Scale & Its Ratings

| Scales | Ratings |
|--|---|
| 1. I don't remember having seen this word before. | 1. The word is not familiar at all. |
| 2. I have seen this word before, but I don't know what it means. | 2. The word is familiar but its meaning is not known. |
| 3. I have seen this word before, and I <u>think</u> it means _____. (synonym or translation) | 3. A correct synonym or translation is given. |
| 4. I know this word. It means _____. (synonym or translation) | 4. The word is used with semantic appropriateness in a sentence. |
| 5. I can use this word in a sentence: _____ (Write a sentence). | 5. The word is used with semantic appropriateness and grammatical accuracy in a sentence. |

Vocabulary Knowledge Scale is employed in this study to measure to what extent or depth the Japanese and Chinese students know the academic vocabulary. They were asked to decide which scale

best represents how well they knew the 40 tested words. Furthermore, VKS measures either the receptive or productive academic vocabulary knowledge of the Japanese and Chinese students.

3. Methodology

3.1. Students' Performances in the Productive Levels Test

3.1.1. Subjects

145 university students, including 71 Japanese at Hiroshima University of Japan in October, 2001, and 74 Chinese at Tianjin University of China in December, 2001, were administered to conduct the Productive Levels Test. The Japanese students majored in society and culture, information and behavioral sciences, and natural and social environment. The Chinese students majored in mechanical and electronical engineering. The time available for the whole test was 40 minutes.

3.1.2. Productive Levels Test (See Appendix 1)

Laufer and Nation (1995) developed the Productive Levels Test which is used to measure a learner's productive vocabulary knowledge according to word frequency levels: 2,000, 3,000, University Word List (Xue & Nation, 1984), 5,000 and 10,000. The test uses a completion item type where the first few letters of the word are provided to cue the tested word. The test requires writing the missing target word in each blank with a sentence provided in an attempt to ensure that only the target word correctly fits it. The tested words require more word knowledge or more use of sentence-contextual information.

3.1.3. Analysis of the Performances of JS & CS in the 2,000 Word-level of PLT

3.1.3.1. Correct and Incorrect responses for the 18 Words

In this study the performances of the Japanese and Chinese students for the 18 words at the 2,000 word-level of PLT, are examined, analyzed, and compared according to the correct and incorrect responses. The incorrect responses, or incorrectly produced words by the students, are classified into 5 types of errors. They are listed as follows:

- Error 1 = Misspelling. (abbr., Spelling)
- Error 2 = Disagreement of tense, voice, or subject-verb. (abbr., Verb)
- Error 3 = Misusing singular and plural forms. (abbr., Singu/plur)
- Error 4 = Confusing the meaning of the morphologically or phonetically similar words. (abbr., Synform)
- Error 5 = No answer given. (abbr., No answer)

The measurement for the Productive Levels Test is shown in Table 2.

Table 2. Measurement for the Productive Levels Test

| No gains (Incorrect responses) | | | | | Gains |
|--------------------------------|---------|---------|---------|---------|-------------------|
| Error 1 | Error 2 | Error 3 | Error 4 | Error 5 | Correct responses |
| Negative | | | | | Positive |

Table 3 shows that the number of the students in selecting the correct response, and incorrect response - the five types of errors for each of the 18 tested words. From this table, the errors easier to make when the students produce the 18 tested words in the 2,000 word-level can be known.

Table 3. No. of the Students in Giving the Correct & Incorrect responses for 18 Words

| No | Words | 1. Correct responses | | 2. Incorrect responses | | | | | | | | | |
|----|-------------|----------------------|----|------------------------|----|---------|----|---------------|----|------------|----|--------------|----|
| | | | | 1. Spelling | | 2. Verb | | 3. Singu/plur | | 4. Synform | | 5. No Answer | |
| | | JS ² | CS | JS | CS | JS | CS | JS | CS | JS | CS | JS | CS |
| 1 | Opportunity | 25 | 44 | 33 | 24 | | | | | 7 | | 6 | 6 |
| 2 | Dozen | 51 | 55 | 8 | 17 | 1 | | 4 | 1 | | | 7 | 1 |
| 3 | Tax | 43 | 40 | 2 | 6 | | | | | 12 | 7 | 14 | 21 |
| 4 | Treasure | 37 | 36 | 2 | 9 | | | | | 7 | | 25 | 29 |
| 5 | Charm | 26 | 6 | | 3 | | | 1 | | 42 | 42 | 2 | 23 |
| 6 | Lack | 43 | 50 | 3 | 3 | | | | 2 | 8 | 5 | 17 | 14 |
| 7 | Cream | 61 | 38 | 4 | 3 | | | | | 1 | | 5 | 33 |
| 8 | Wealth | 46 | 57 | 14 | 6 | | | | 4 | 2 | 3 | 9 | 4 |
| 9 | Pupil | 16 | 37 | 4 | 12 | | | 13 | 7 | 1 | | 37 | 18 |
| 10 | Stretch | 16 | 9 | 2 | 11 | 40 | 10 | | | | | 13 | 44 |
| 11 | Introduce | 51 | 53 | 4 | | 15 | 19 | | | 1 | 1 | | |
| 12 | Admire | 46 | 64 | 2 | 4 | | 1 | | | 3 | | | |
| 13 | Burst | 16 | 16 | | | | | | | 37 | 23 | 18 | 35 |
| 14 | Improve | 40 | 57 | | 3 | | | | | | 1 | 31 | 13 |
| 15 | Deliver | 44 | 44 | 5 | 10 | 2 | 4 | | 1 | 5 | 2 | 15 | 13 |
| 16 | Slight | 22 | 34 | 1 | 2 | | | | | 16 | 2 | 32 | 36 |
| 17 | Lovely | 59 | 41 | 1 | 2 | | | | | 8 | 23 | 3 | 8 |
| 18 | Popular | 59 | 64 | 8 | 4 | | | | | 3 | 2 | 1 | 1 |

The percentage and number of the correct responses and incorrect responses of the Japanese and Chinese students are shown in Table 4.

Table 4. Percentage & No. of JS & CS in Correct & Incorrect responses for 18 Words

| | Correct | Incorrect responses | | | | |
|----|------------|---------------------|-------------|--------------|-------------|--------------|
| | Responses | Error 1 | Error 2 | Error 3 | Error 4 | Error 5 |
| JS | 39 (55%) | 5.2 (7.37%) | 3.3 (4.54%) | 1.6 (1.41%) | 8.6 (12.0%) | 14.2 (18.5%) |
| CS | 41.3 (56%) | 6.61 (8.93%) | 1.9 (2.6%) | 0.82 (1.13%) | 6.17 (8.4%) | 15.1 (22.5%) |

Table 4 indicates that for the productive vocabulary knowledge, even at the 2,000 word-level, the total number of 71 Japanese students for the correct responses in the 18 words is 39, which accounts for 55% of the Japanese students, while the percentage of the incorrect responses is 45%; the total number of the 74 Chinese students for the correct responses in the 18 words is 41.4, which accounts for 56% of the Chinese students, while the percentage of the incorrect responses is 46%.

3.1.3.2. Incorrect Responses - Five Types of Errors Made by JS & CS for the 18 Words

Table 3 and Figure 1 show that in Error 1 - Misspelling, more Chinese students than Japanese students make spelling mistakes, accounting for 8.9% of 74 Chinese, and 7.3% out of 71 Japanese. In Error 2 - Disagreement of tense, voice, or subject-verb, there are more Japanese students (4.5% of 71) than Chinese students (2.6% out of 74). In Error 3 - Misusing singular and plural forms, among the 5 types of errors the fewest students make this error (1.4 and 1.1% for the Japanese and Chinese students respectively). In Error 4 - Confusing the meaning of the morphologically or phonetically similar words, the

percentage of Japanese is 12, and that of Chinese is 8.4. In Error 5 - No answer given, there are more Chinese students (22.4%) than Japanese students (18.5%). Among the 5 errors, except Error 5, Error 4 is the easiest mistake for both groups of the students to make.

The comparison of Japanese and Chinese students in making the 5 types of errors is shown as follows:

- Error 1 — Chinese students > Japanese students
- Error 2 — Japanese students > Chinese students
- Error 3 — Japanese students \approx Chinese students
- Error 4 — Japanese students > Chinese students
- Error 5 — Chinese students > Japanese students

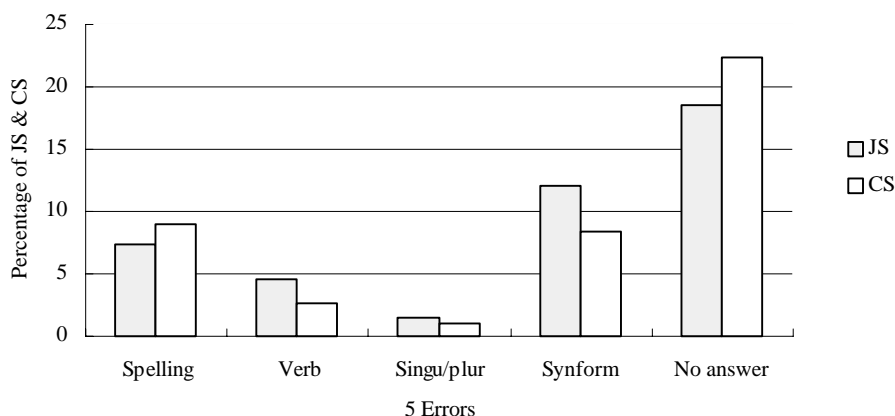


Figure 1 . Percentage of JS & CS in Making 5 Errors

3.1.3.4. Results of the Productive Levels Test of the Japanese and Chinese Students

It can be seen that both groups of the students are similar for the 2,000 word-level knowledge. The correct responses by both is about 50%. The incorrect responses by both are less than 50%. There are some differences between the Japanese and Chinese students in the incorrect responses for each of the 5 errors. It is shown that it is easier for students to make the error – confusing the meaning of morphologically or phonetically similar words. The second error comes to “misspelling”, for the words at the 2,000 level. This suggests that the students might have learnt the tested words. But since the representation of these learned words in the memory is defective, they confuse phonetically or morphologically similar words. A similar word that shares most of its formal features might look identical to it. Or, the students might have studied two or more similar words but since the knowledge of them is insecure, they are not sure which word form is associated with its accurate meaning. They might be familiar with the written form of a certain word, recognize it, and know what it means when it is met in reading or listening, but they might not spell it correctly, nor construct it using the right word parts in their appropriate forms, nor produce the word to express the meaning, nor use it in their writing or speaking.

3.2. Students' Performances in the Academic Vocabulary Test

3.2.1. Subjects

144 university students in their sophomore year, including 72 Japanese students at Hiroshima University of Japan in November, 2001, and 72 Chinese students at Tianjin University of China in January, 2002, were administered to take the Academic Vocabulary Test. The Japanese students majored in mechanical engineering, electrical engineering, and naval architecture. The Chinese students majored in naval and hydrolic engineering, civil engineering, and architecture. The time available for the whole test was 40 minutes.

3.2.2. Academic Vocabulary Test

The Academic Vocabulary Test is developed and designed in this study, as shown in Appendix 2. It tests 40 academic words. As the presentation of the vocabulary items on the contextual information in some meaningful way would facilitate students' response to the tested words, two texts are provided. The 40 tested words are adopted from the Academic Word List, which was compiled by Coxhead (1998) from a corpus of written academic English.

In AVT, students were required to give their response to 40 underlined academic words in the two texts according to a five-point scale of the Vocabulary Knowledge Scale. The performances of the Japanese and Chinese students in AVT were evaluated and measured on a five-point scale from unfamiliarity, to recognizing the words, then to using and producing the words in a sentence. If the student selected Scale 1 for any of the 40 tested words, it was evaluated as gaining 1 score. If he selected Scale 5 for any of the 40 tested words, it was evaluated as gaining 5 scores.

In AVT, the students were required to present their knowledge of the 40 words according to a five-point scale. Then it can demonstrate quantitatively the students' knowledge of the words. This test gives some indication of where along the acquisition continuum a word exists in a student's lexicon. It examines students' receptive, as well as productive knowledge of the academic vocabulary according to a five-point scale.

3.2.3. Performances of the Japanese and Chinese Students in AVT

3.2.3.1. Analysis of the AVT Scores of JS & CS

The ratings (See Table 1) for the Vocabulary Knowledge Scale present the mastery of the vocabulary in an ascending order, from unfamiliarity, to recognizing the words, to using and producing the words.

Figure 2 and Table 6 show that the population mean score in Scale 2 - "I have seen this word before, but I don't know what it means", is the highest. The population mean score of the Japanese is 25.1, accounting for 39.9% of the 72 Japanese students. The population mean score of the Chinese is 22.9, accounting for 31.8% of the 72 Chinese. This indicates that the students have learned or encountered some of the academic vocabulary, but they are uncertain or ignorant of the word meanings, as Scale 2 just shows whether the students have encountered the words.

The population mean score, standard deviation, and standard error of the Japanese and Chinese students for each of the 40 tested words are shown in Table 5.

In Scale 4 - "I know this word. It means___. (synonym or translation)", the population mean score of the Japanese is 19.3, accounting for 26.81% of the 72 Japanese while that of the Chinese is 21.15, accounting for 29.38% of the 72 Chinese. This shows that quite a lot of the students, either Japanese or Chinese students, perform better in knowing the meaning of some tested words or giving an equivalent

Table 5. Pop. Mean Score, Std. D, and Std. E of the 40 Words

| | Mean | | Std. Deviation | | Std. Error | | Minimum | | Maximum | |
|---------------|------|------|----------------|------|------------|------|---------|----|---------|----|
| | JS | CS | JS | CS | JS | CS | JS | CS | JS | CS |
| physical | 3.83 | 3.56 | 1.01 | 0.90 | 0.12 | 0.11 | 1 | 1 | 5 | 5 |
| interactive | 2.63 | 2.56 | 0.98 | 0.99 | 0.12 | 0.12 | 1 | 1 | 5 | 5 |
| environment | 4.22 | 4.15 | 0.77 | 0.69 | 0.09 | 0.08 | 1 | 2 | 5 | 5 |
| aid | 2.75 | 3.51 | 1.29 | 1.07 | 0.15 | 0.13 | 1 | 1 | 5 | 5 |
| media | 3.47 | 2.99 | 1.14 | 1.07 | 0.13 | 0.13 | 1 | 1 | 5 | 5 |
| authority | 3.10 | 2.76 | 1.20 | 1.08 | 0.14 | 0.13 | 1 | 1 | 5 | 5 |
| investigate | 3.18 | 2.69 | 1.25 | 1.19 | 0.15 | 0.14 | 1 | 1 | 5 | 5 |
| alter | 2.67 | 2.93 | 1.11 | 1.28 | 0.13 | 0.15 | 1 | 1 | 5 | 5 |
| despite | 3.33 | 3.56 | 1.19 | 0.93 | 0.14 | 0.11 | 1 | 2 | 5 | 5 |
| instruction | 3.07 | 3.35 | 1.15 | 1.20 | 0.14 | 0.14 | 1 | 1 | 5 | 5 |
| initially | 2.24 | 2.25 | 1.13 | 1.20 | 0.13 | 0.14 | 1 | 1 | 5 | 5 |
| assurance | 2.40 | 2.71 | 1.11 | 0.93 | 0.13 | 0.11 | 1 | 1 | 5 | 5 |
| furthermore | 3.28 | 3.07 | 0.81 | 1.00 | 0.10 | 0.12 | 1 | 1 | 4 | 5 |
| significance | 2.75 | 3.10 | 1.03 | 1.26 | 0.12 | 0.15 | 1 | 1 | 5 | 5 |
| contributing | 2.97 | 3.17 | 1.09 | 1.15 | 0.13 | 0.14 | 1 | 1 | 5 | 5 |
| facilitate | 1.71 | 1.65 | 0.62 | 0.98 | 0.07 | 0.12 | 1 | 1 | 4 | 5 |
| external | 2.72 | 3.21 | 1.12 | 1.21 | 0.13 | 0.14 | 1 | 1 | 5 | 5 |
| create | 4.01 | 3.44 | 0.76 | 1.10 | 0.09 | 0.13 | 1 | 1 | 5 | 5 |
| participate | 3.21 | 3.74 | 1.34 | 1.09 | 0.16 | 0.13 | 1 | 1 | 5 | 5 |
| process | 3.96 | 3.57 | 0.66 | 1.00 | 0.08 | 0.12 | 2 | 1 | 5 | 5 |
| primarily | 2.86 | 2.75 | 0.97 | 1.14 | 0.11 | 0.13 | 1 | 1 | 5 | 5 |
| evidence | 3.50 | 3.15 | 1.22 | 1.21 | 0.14 | 0.14 | 1 | 1 | 5 | 5 |
| publications | 2.31 | 2.85 | 0.94 | 0.93 | 0.11 | 0.11 | 1 | 1 | 4 | 5 |
| specific | 2.88 | 3.10 | 1.05 | 0.97 | 0.12 | 0.11 | 1 | 1 | 5 | 5 |
| selected | 3.81 | 3.76 | 0.76 | 0.83 | 0.09 | 0.10 | 2 | 2 | 5 | 5 |
| specified | 2.40 | 2.19 | 0.93 | 0.87 | 0.11 | 0.10 | 1 | 1 | 4 | 5 |
| feature | 3.06 | 2.76 | 1.14 | 1.01 | 0.13 | 0.12 | 1 | 1 | 5 | 5 |
| similarly | 3.18 | 3.67 | 0.89 | 0.82 | 0.11 | 0.10 | 1 | 1 | 5 | 5 |
| duration | 1.43 | 1.49 | 0.65 | 0.84 | 0.08 | 0.10 | 1 | 1 | 4 | 5 |
| vary | 2.65 | 2.93 | 1.13 | 1.09 | 0.13 | 0.13 | 1 | 1 | 5 | 5 |
| unique | 3.74 | 2.68 | 1.20 | 1.24 | 0.14 | 0.15 | 1 | 1 | 5 | 5 |
| subsequent | 1.89 | 1.89 | 0.78 | 0.85 | 0.09 | 0.10 | 1 | 1 | 4 | 4 |
| deriving | 1.58 | 2.22 | 0.75 | 1.02 | 0.09 | 0.12 | 1 | 1 | 4 | 5 |
| involved | 3.13 | 3.00 | 1.16 | 1.06 | 0.14 | 0.13 | 1 | 1 | 5 | 5 |
| format | 2.29 | 2.79 | 0.76 | 0.89 | 0.09 | 0.10 | 1 | 1 | 5 | 5 |
| procedure | 2.01 | 1.97 | 0.81 | 0.87 | 0.10 | 0.10 | 1 | 1 | 5 | 4 |
| extract | 1.83 | 2.00 | 0.71 | 0.69 | 0.08 | 0.08 | 1 | 1 | 4 | 5 |
| emerged | 2.35 | 1.99 | 1.24 | 0.86 | 0.15 | 0.10 | 1 | 1 | 5 | 5 |
| supplementary | 2.17 | 1.81 | 0.96 | 0.83 | 0.11 | 0.10 | 1 | 1 | 5 | 4 |
| identify | 2.85 | 3.14 | 1.29 | 1.07 | 0.15 | 0.13 | 1 | 1 | 5 | 5 |

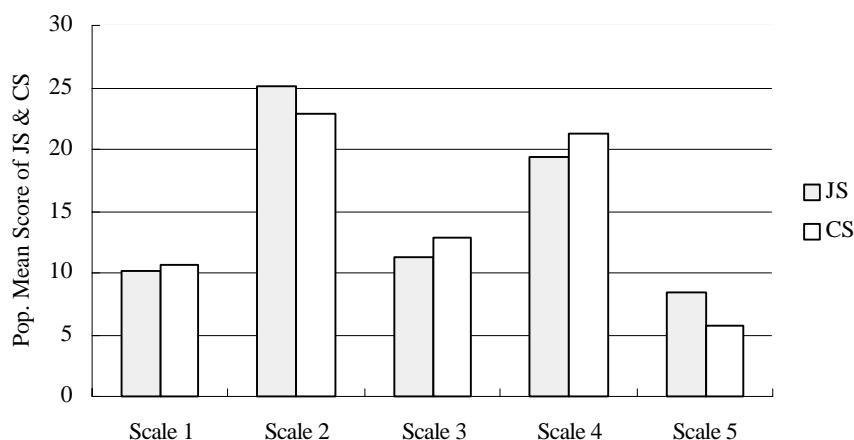


Figure 2. Pop. Mean of the JS & CS in Selecting the 40 Tested Words

Table 6. Pop. Mean & Percentage³ of the JS & CS in Selecting the 40 Tested Words in 5 Scales

| | JS | (%) | CS | (%) |
|---------|-------|--------|-------|--------|
| Scale 1 | 9.725 | 13.51% | 9.800 | 13.61% |
| Scale 2 | 25.08 | 34.83% | 22.88 | 31.77% |
| Scale 3 | 11.23 | 15.59% | 12.83 | 17.81% |
| Scale 4 | 19.30 | 26.81% | 21.15 | 29.38% |
| Scale 5 | 6.675 | 9.271% | 5.350 | 7.430% |

in their L1, Japanese or Chinese, than their knowledge in Scale 5 - “I can use this word in a sentence: _____ (Write a sentence)”, which requires the ability of using the tested words and producing a sentence.

Figure 2 and Table 6 also show that Scale 5 is the hardest for both groups of the students as this scale requires students not only recognize the tested word but also use the word and produce a sentence, in which the productive vocabulary knowledge is needed. The population mean score of the Japanese students is 6.675, accounting for 9.271% of the 72 Japanese, and that of the Chinese students is 5.35, accounting for 7.43% of the 72 Chinese students. This indicates that, in the ability of using a word and producing a sentence, the Japanese students are better than the Chinese students. Thus, Scale 5 is the hardest, since fewer students got it right than the other 4 scales, as it requires students to use the tested words and produce a sentence.

3.2.3.2. Words with Significant Differences between the JS & CS

Table 7 shows the percentage of the Japanese and Chinese students in giving their selection for Scale 4 and Scale 5, i.e., in gaining the scores of 4 and 5, for the words with significant differences. The figures in the table are the percentage of the two groups of the students in selecting the two scales.

Table 8 shows that the performances of the two groups of the students for some of the words are quite similar. The statistically analyzed data, however, show significant differences in the following words out

Table 7. Percentage of JS & CS in Selecting Scale 4 & 5

| Words | CS (%) | | JS (%) | |
|---------------|---------|---------|---------|---------|
| | Scale 4 | Scale 5 | Scale 4 | Scale 5 |
| aid | 44.4 | 16.7 | 19.4 | 12.5 |
| media | 27.8 | 6.9 | 29.2 | 22.2 |
| assurance | 27.8 | 25.0 | 18.1 | 2.8 |
| furthermore | 31.9 | 5.6 | 48.6 | 0.0 |
| significance | 40.3 | 9.7 | 19.4 | 6.9 |
| external | 41.7 | 11.1 | 18.1 | 9.7 |
| create | 43.1 | 15.3 | 66.7 | 20.8 |
| participate | 55.6 | 20.8 | 29.2 | 20.8 |
| process | 51.4 | 13.9 | 69.4 | 15.3 |
| publication | 23.6 | 2.8 | 13.9 | 0.0 |
| similarly | 72.2 | 4.2 | 34.7 | 2.8 |
| unique | 27.8 | 5.6 | 29.2 | 33.3 |
| involve | 19.40 | 11.10 | 29.20 | 12.50 |
| format | 23.60 | 1.40 | 2.80 | 2.80 |
| emerge | 6.90 | 1.40 | 16.70 | 6.90 |
| supplementary | 2.80 | 1.40 | 11.10 | 1.40 |

Table 8. Words with Significant Differences in AVT

| | Pop. Mean Score | | Sig. (2-tailed) |
|---------------|-----------------|------|-----------------|
| | JS | CS | P < .05 |
| Aid | 2.75 | 3.51 | .000 |
| Media | 3.47 | 2.99 | .009 |
| Investigate | 3.18 | 2.69 | .018 |
| External | 2.72 | 3.21 | .013 |
| Create | 4.01 | 3.44 | .000 |
| Participate | 3.21 | 3.74 | .011 |
| Process | 3.96 | 3.57 | .007 |
| Publication | 2.31 | 2.85 | .001 |
| Similarly | 3.18 | 3.67 | .001 |
| Unique | 3.74 | 2.68 | .000 |
| Derive | 1.58 | 2.22 | .000 |
| Format | 2.29 | 2.71 | .000 |
| Emerge | 2.35 | 1.97 | .044 |
| Supplementary | 2.17 | 1.81 | .017 |

of the 40 between the two groups of the students, who learn English as a foreign language under different curricula, instruction and different teaching materials.

The processed data also show there are no Japanese students who got a score of 5 for the words, “furthermore”, “facilitate”, “publication”, “specify”, “duration”, “subsequent”, “deriving”, and “extract”. More than 30% of the Chinese students did not get the score of 4 or 5 for the words, “initially”, “facilitate”, “duration”, “subsequent”, and “supplementary”. More than 30% of the Japanese students did not get a score of 4 or 5 for the words, “facilitate”, “duration”, and “deriving”.

It is surmised that the factors which affect the performance of the tested words are the frequencies of the words occurring in the textbooks, the loan words in the students' L1, the words related to the computer terms, or the students' aptitude initiated by social settings for a certain term of word classifications like these of the Longman Lexicon of Contemporary English (McArthur, 1981). Further study will be undertaken and focus on the investigation of these factors, which might prove an interesting topic for us to touch upon.

3.2.3.3. Results of AVT of the JS and CS

The analysis for AVT shows that Japanese and Chinese students have a similar tendency in recognizing and using the 40 academic words. Differences between them are also seen. Both groups of students perform strongest at Scale 2 and weakest at Scale 5. This indicates that the academic vocabulary knowledge of the students is mainly maintained on the stage of recognizing academic words. They might have encountered the academic words. Most of them recognize or have an obscure memory for some of the tested academic words, but they are weak at using the academic words to produce a sentence. The significant differences in performing AVT are surmised to be due to the different learning and social settings between the Japanese and Chinese students. The factors leading to these differences which will be an interesting topic to investigate further.

4. Conclusions and Recommendations

The results found in PLT reveal that the productive vocabulary knowledge of the Japanese and Chinese university students at the 2,000 word-level is not sufficient to confront the tasks required by the English courses for a university student.

The results in AVT suggest that the academic vocabulary knowledge of the students is mainly maintained on the stage of recognizing the academic words, namely are good at recognizing the 2000 frequently used words, and the academic vocabulary (570 word families), but they are not good at producing and using these words, even after they have learned English for about seven or more years in classroom instruction.

It is recommended that in teaching vocabulary the design of the receptive and productive vocabulary learning curriculum be balanced, and the activities of practicing the ability of using and producing the frequently-used words in English speech and writing be provided optimally in English instruction for the Japanese and Chinese university students studying English as a foreign language.

Endnotes

¹ Tianjin University was established in 1895, and the first university in the modern Chinese higher education. It is one of the 16 most prestigious comprehensive universities in China. The number of the students is 22,000. There are 11 graduate schools and about 30 faculties.

² JS = Japanese students; CS = Chinese students.

³ Population mean = the number of the students who select each of the 5 scales is divided by 40 (the number of the 40 tested words).

References

- Coady, J. (1993). Research on ESL/EFL vocabulary acquisition: putting it all in context. In T. Huckin, M. Haynes, & J. Coady (Eds.), *Second language reading and vocabulary learning* (pp. 3-23). Norwood, NJ: Ablex.
- Coxhead, Averil. (1998). *An academic word list*. ELI Occasional Publication No. 18, Victoria University of Wellington, New Zealand.
- Coxhead, A. & Nation, Paul. (2001). The specialized vocabulary of English for academic purposes. *Research perspectives on English for academic purposes*. (2001). Cambridge: Cambridge University Press.
- McArthur, Tom. (1981). (Ed.). *Longman lexicon of contemporary English*. Harlow: Longman.
- Nation, I. S. P. (1990). *Teaching and learning vocabulary*. New York: Newbury House Publishers.
- Nation, I. S. P. (2001). *Learning vocabulary in another language*. London: Cambridge University Press.
- Nation, P., & Newton, J. (1997). Teaching vocabulary. In J. Coady & T. Huckin, (Eds.), *Second language vocabulary acquisition* (pp. 238-245). Cambridge: Cambridge University Press.
- Paribakht, T. Sima, and Wesche, Marjorie. 'Vocabulary enhancement activities and reading for meaning in second language vocabulary'. In Coady, James & Huckin, Thomas. (Eds.). (1997). *Second language vocabulary acquisition*. London: Cambridge University Press.
- Schmitt, Norbert. (2000). *Vocabulary in language teaching*. London: Cambridge University Press.
- West, Michael. (1953). *A general service list of English words*. London: Longman, Green and Co.
- Xue, Guoyi. & Nation, I.S. P. (1984). 'A university word list', *Language Learning and Communication*, 3, 215-229.

Appendix 1

Productive Levels Test (The 2,000 Word-Level)

Direction: Complete the underlined words.

Here is an example: He was riding a bicycle.

The 2,000 Word-Level

1. I'm glad we had this opp_____ to talk.
2. There are a doz_____ eggs in the basket.
3. Every working person must pay income t_____.
4. The pirates buried the trea_____ on a desert island.
5. Her beauty and cha_____ had a powerful effect on men.
6. La_____ of rain led to a shortage of water in the city.
7. He takes cr_____ and sugar in his coffee.
8. The rich man died and left all his we_____ to his son.
9. Pup_____ must hand in their papers by the end of the week.
10. This sweater is too tight. It needs to be stret_____.
11. Ann intro_____ her boyfriend to her mother.
12. Teenagers often adm_____ and worship pop singers.
13. If you blow up that balloon any more it will bur_____.
14. In order to be accepted into the university, he had to impr_____ his grades.
15. The telegram was deli_____ two hours after it had been sent.
16. The differences were so sl_____ that they went unnoticed.

17. The dress you're wearing is lov ____.

18. He wasn't very popu ____ when he was a teenager, but he has many friends now.

Appendix 2. Academic Vocabulary Test

Direction: Read Text 1 and Text 2, and pay attention to the meaning of the 20 underlined words in each of the two texts, which also are listed in the following table. Then read the sentences in the five scales. Tick (?) one choice from Scale 1, 2, 3, 4, & 5 for each word.

Text 1: Part of this distancing effect also lies in the (1) physical layout of the University and its classrooms. The immovable rows of seats in the larger lecture theatres are not conducive to the development of (2) interactive learning (3) environments. Some lecturers continue to give classes without the (4) aid of (5) media in the belief that their ancient lecture notes and measures tones of (6) authority will motivate 150 or 300 recently enrolled First Years to (7) investigate a subject further at a later date. In spite of this however, several students had attended lectures where staff had (8) altered this traditional approach to large group teaching and, (9) despite the problems with room layout and class size, had provided interactive (10) instruction which the students remembered and enjoyed.

Small group or tutorial situations were a greatly preferred style of teaching. Several students mentioned that they (11) initially lacked confidence in speaking before people they didn't know, but they had gained a sense of self (12) assurance over their time at the University and most of them used tutorials to "bounce ideas off other students". (13) Furthermore, some students had extended the study group approach independently and had formed informal, self-led study groups with other Maori students. These groups hold particular (14) significance in (15) contributing to the informal rhythms of university life. They (16) facilitate the development of strong networks among Maori students, and they also provide support for students who have knowledge of their own culture and who wish to enter the 'deep' structures of learning. For those students competing against the pressures of university study, the commitment to adopt 'deep' approaches to their learning can be swayed by (17) external factors, such as departmental ethos, teaching methodologies and an overabundance of unconnected information. The desire to (18) create knowledge from a quantity of information may be in part satisfied by students who (19) participate in self-directed study groups. Here, it may be possible for the university to lend its support to those students who are taking the time to extract an understanding of intellectual (20) processes alongside the demand to keep producing essays and degrees.

Text 2: The Burns and Mitchell technique of dating business cycles relied (1) primarily on two sorts of information: the descriptive (2) evidence from business (3) publications and general business conditions indices, and the "(4) specific cycles found in many individual series and the tendency for turning points to sometimes cluster at certain dates. Based on this information, a set of reference cycle dates were (5) selected that (6) specified the turning points in aggregate economic activity". A key (7) feature of the Burns and Mitchell approach was to focus on the amount of cyclical co-movement or coherence among a large number of economic variables. This co-movement is the prime characteristic of their definition of the business cycle "... a cycle consists of expansions occurring at about the same time in many economic activities, followed by (8) similarly general recessions, contractions, and revivals which merge into the expression phase of the next cycle: ... in (9) duration business cycles (10) vary from more than one year to ten or twelve years ...".

The NBER approach is based on the view that there is no (11) unique way of combining all these

activities, and accordingly the business cycle cannot be fully depicted by a single measure, e.g. Burns (1969, p 13). Burns and Mitchell, and (12) subsequent NBER researchers, intended therefore, before the computer age, to provide a standard technique with a set of decision rules for (13) deriving business cycle turning points based on these two sorts of information. In practice, this (14) involved the application of a standard (15) format of filtering (16) procedures to (17) extract the turning points in each data series, and then combining this information in a judgemental way to determine a single turning point date. Other procedures, notably reference cycle indexes and coincident indexes, subsequently (18) emerged as (19) supplementary procedures for combining a large number of data series including various measures of output, production inputs, price series, monetary aggregates, etc, into a single composite index which have also been used to (20) identify turning points.

Table in Appendix 2

| | | Scale 1 | Scale 2 | Scale 3 | Scale 4 | Scale 5 |
|----|---------------|--|---|--|--|--|
| | | I don't remember having seen this word before. | I have seen this word before, but I don't know what it means. | I have seen this word before, and I think it _____ means. (synonym or translation) | I know this word. It means _____. (synonym or translation) | I can use this word in a sentence: _____ (Write a sentence.) |
| 1 | physical | | | | | |
| 2 | interactive | | | | | |
| 3 | environment | | | | | |
| 4 | aid | | | | | |
| 5 | media | | | | | |
| 6 | authority | | | | | |
| 7 | investigate | | | | | |
| 8 | alter | | | | | |
| 9 | despite | | | | | |
| 10 | instruction | | | | | |
| 11 | initially | | | | | |
| 12 | assurance | | | | | |
| 13 | furthermore | | | | | |
| 14 | significance | | | | | |
| 15 | contributing | | | | | |
| 16 | facilitate | | | | | |
| 17 | external | | | | | |
| 18 | create | | | | | |
| 19 | participate | | | | | |
| 20 | process | | | | | |
| 21 | primarily | | | | | |
| 22 | evidence | | | | | |
| 23 | publications | | | | | |
| 24 | specific | | | | | |
| 25 | selected | | | | | |
| 26 | specified | | | | | |
| 27 | feature | | | | | |
| 28 | similarly | | | | | |
| 29 | duration | | | | | |
| 30 | vary | | | | | |
| 31 | unique | | | | | |
| 32 | subsequent | | | | | |
| 33 | deriving | | | | | |
| 34 | involved | | | | | |
| 35 | format | | | | | |
| 36 | procedure | | | | | |
| 37 | extract | | | | | |
| 38 | emerged | | | | | |
| 39 | supplementary | | | | | |
| 40 | identify | | | | | |